

Work Order ID 151924

Friday, October 14, 2016 1:55:23 PM

151924

Page 1

Item ID: D6104-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: 17-4 SS Roundbar 6.50"OD
Start Date: 11/15/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 11/29/2016 Req'd Qty: 10.00 ***10*** Customer:

Reference:

DAS

21

Approvals: Process Plan: 9-89 Date: OCT 18 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D6104	Rev B
-------	-------

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 34012 a) Description: S.S round billet b) Ø6.50" x
4.100" long c) Tolerance on all dimensions are +0.030"/-0.000"d) Material:
17-4PH Stainless steel e) Min UTS = 170 KSI (38 HRc) Material
certification required

10OCT 20 2016DAS
13
9-89

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.03

Packaging

Ensure material certification is attached

10x 8P1610-31

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6104

10 Ø mf
16/11/03

Work Order ID 151924

Friday, October 14, 2016 1:55:23 PM

151924

Page 2

Item ID: D6104-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: 17-4 SS Roundbar 6.50"OD
Start Date: 11/15/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 11/29/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: MAT043	0.00							
130									
Packaging	Memo	0.02				10	6		10/11/03
Packaging	LOCATION: MAT043								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.17							
Quality Control									

DAS
21
9-89 **NOV 07 2016**

DAS
21
9-89 **NOV 03 2016**

Picklist Print

Friday, October 14, 2016 1:55:23 PM

Page 1

Work Order ID: 151924

151924

Parent Item: D6104-011

D6104-011

Parent Item Name: 17-4 SS Roundbar 6.50"OD

Start Date: 11/15/2016

Required Date: 11/29/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP A02.12.02New Issue KJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6104-011P

Purchased

No

110

Each

1.0000

1

10

D6104-011P

17-4 SS Roundbar 6.50"Od

10x SP/6-10-31

Location

Loc Qty

Loc Code

MAT043

1

143414

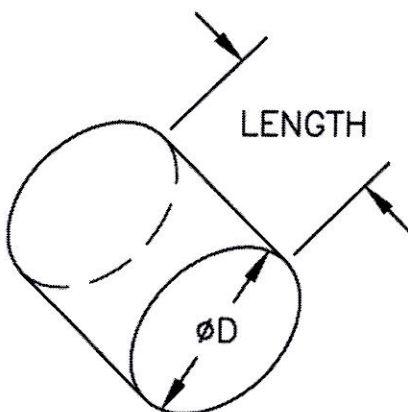
1



DESIGN RT	DRAWN BY [Signature]	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED
02.11.29 [Signature]

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151924 MCS
16-10-18

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34012**

Purchase Order Date 10/20/2016

PO Print Date 10/20/2016

Page Number 1 of 2

Order From :

METAX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

EMAILED
OCT 21 2016

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D6104-007P	17-4 SS Roundbar 4.50"Od	11/14/2016 Yes 11/14/2016		10.00 Each	\$68.53	\$685.30
AS PER DWG D6104 REV. B B151952 MATERIAL: 17-4 PH AS PER AMS 4643 OR AISI 630 SIZE: 4.50" X 5.10" LONG							
2	D6104-011P	17-4 SS Roundbar 6.50"Od	11/14/2016 Yes 11/14/2016		10.00 Each	\$115.00	\$1,150.00
AS PER DWG D6104 REV. B B151924 MATERIAL: 17-4 PH SIZE: 6.50" X 4.100" LONG							
Line Total:							\$685.30
Line Total:							\$1,150.00

Note:

10/20/2016

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3113167

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 28-OCT-16	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3113167-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No 4539996	Line No 3	Item No 15003.MO	Description 6.5000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.120.0000-168.0000 CUT TO 4.1 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No 34012		Part Number YOUR ITEM NUMBER: D6104-011		Ordered Qty 6.00 PCS		Invoice Qty 6.00 PCS	
Details			ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS				
Delivery No. 120625662	Mill	Heat Number 	Mech Id	PCS 6	Width (IN)	Length (IN)	Shipped Qty(LBS) 240.2719

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 28-OCT-2016 03:24:12 PM



Castle Metals®

A. M. Castle & Co.

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CERTIFICATE OF CONFORMANCE

Page 2 of 2

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These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	



OCT 28 2016

Date:

Name:

8016-10-31

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
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**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3113167

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
28-OCT-16	ORIGIN	Prepaid		MANITOULIN		3113167-2	

Shipment Details			Final Destination Branch - TOR				
Order No	Line No	Item No	Description				
4539996	2	15003.MO	6.5000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.120.0000-168.0000 CUT TO 4.1 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No		Part Number	Ordered Qty	Invoice Qty			
34012		YOUR ITEM NUMBER: D6104-011	4.00 PCS	4.00 PCS			
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
120625706				4			160.1813

SP1610-31

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Date Printed: 28 OCT 2016 03:24:12 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

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These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:



OCT 28 2016

Date:

Name:

[Handwritten signature]

SP1610-31



VALBRUNA

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 630
PORT WATNE IN 46083 USA
PHONE: 260.401.2000 - FAX: 260.434.2001

Product Certification Report

Report Number: **5041620**

Certified on Aug 26, 2014 Page 1 of 2

Order ID: 1401592 005	Order Date: 6/10/14	Commodity Code: 6306.5
Dim 1: 6.5000	Dim 2: .0000	Dim 3: .0000
Heat ID: 426522	Customer ID: 002472	Customer Purchase Order: 60452
Product Shape: Rounds	Product Surface: HR & Rough Turned	Customer Grade: 630
Length (Inches): 120.000 Min. 168.000 Max.	Wt of Lading #: 422776	Weight:

Ship
To

VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL. 60188

Sold
To

VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL 60188

Lifts: 0050

API 6A

UNS S17400

AMS 5643T (except finish)

ASME A-564-13

AISI 17400

ASTM 564-13 Type 630

EN 10204 DTD 2004 3.1

ASTM A484-13a

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Co	Ta	Co+Ta
.04	.60	.027	.023	.45	15.82	4.43	.27	3.31	.03	.29	.000	.29

BRINELL (Type A device used)

HBW

327

TENSILE PROPERTIES ASTM E8-13a

CAPABILITY

Cap HB	TS (PSI)	.2%YS (PSI)	YRL(4d)	XRA	AGE(F)
423	192800	170000	18.4	50.2	900

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .00 .00

MACRO ASTM E340-13/E381-01

MACRO

OK

OK

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG .9 Marbles 100

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic tested to ASTM A388- Satisfactory.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email DHackett@valbruna.us

Dennis Hackett

DAS
14
9-03

mf 11/11/03



VALBRUNA
SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WORTH, TX 76163 USA
PHONE 817.434.2900 - FAX 817.434.2901

Product Certification Report

Report Number: **5041620**

Certified on Aug 26, 2014 Page 2 of 2

Order I.D. 1401592 005	Order Date 6/10/14	Quantity Code 6306.5
Dim 1 6.5000	Dim 2 .0000	Dim 3 .0000
Heat I.D. 426522	Customer I.D. 002472	Customer Purchase Order 40452
Product Shape Rounds	Product Surface HR & Rough Turned	Customer Grade 630
Length (inches) 120.000 Min. 168.000 Max.	Size of Lotting # 422776	Weight

Ship To
VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL. 60188

Sold To
VALBRUNA STAINLESS, INC.
370 VILLAGE DRIVE
CAROL STREAM, IL 60188

Material melted in Italy, manufactured in the United States.
Material conforms to listed specifications and is DFARS compliant.
Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

DAS
14
0-50

16/11/03

Castle Metals Inc

HEAT NUMBER: 426522

MECHANICAL ID: _____

ITEM CODE: 15003

LOT NUMBER: _____

PO NUMBER: 319317

REQUEST DATE: 12-2-14

SUPPLIER: Valbruna

SPECIFICATION: _____

LCS: N

COMMENT: _____

APPROVED: [Signature]

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

[Signature]

email DHeckett@valbruna.us

Dennis Heckett

**VALBRUNA****SLATER STAINLESS, INC.**2400 TAYLOR STREET WEST PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260 434 2800 - FAX 260 434 2801**Product Certification Report**Report Number: **5109370**

Certified on Feb 11, 2015 Page 1 of 2

Order I.D. 1403106 001	Order Date 12/29/14	Commodity Code 15003		
Dim 1 6.5000	Dim 2 .0000	Dim 3 .0000	Heat No. 264647	Customer I.D. 001123
Product Shape Rounds			Customer Purchase Order 322637	Customer Grade 17-4
Product Surface HR & Rough Turned				
Length (Inches) 120.000 Min. 168.000 Max.	Bill of Lading # 424140	Weight		

Ship ToCASTLE METALS
3400 NORTH WOLF ROAD
FRANKLIN PARK, IL 60131**Sold To**VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802**Lifts: 0049**

AISI 630

UNS S17400

ASMESA 564 13

Condition A

ASTMA 484-14a

AMS 2303F

3174-02 REV 39

ASTMA 564-13

AMS 5643T (except finish)

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.033	.52	.026	.023	.35	15.76	4.32	.22	3.24	.04	.29	.000	.293

BRINELL (Type A device used)

HBW

346

TENSILE PROPERTIES ASTM E8-13a**CAPABILITY**

Cap HB	TS (PSI)	2%YS (PSI)	%EL(4d)	%RA	AGE(F)
437	205000	175800	16.4	48.6	900

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .00 .00

MACRO ASTM E340-13/E381-01

MACRO

OK

OK

OK

DAS

14

9-89

*16/11/03***PERCENT FERRITE (AMS 2315)**

% FERRITE Etchant Magnification X

AVG .7 Marbles 100

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic tested to ASTM A388- Satisfactory.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email: DHackett@valbruna.us

Dennis Hackett



VALBRUNA
SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 FAX 260.434.2801

Product Certification Report

Report Number: 5109370

Certified on Feb 11, 2015 Page 2 of 2

Order I.D. 1403106 001		Order Date 12/29/14		Commodity Code 15003	
Dim 1 6.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 264647	Customer I.D. 001123	Customer Purchase Order 322637
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 120.000 Min. 168.000 Max.			BS of Lading # 424140	Weight	

**Ship
To**

**CASTLE METALS
3400 NORTH WOLF ROAD
FRANKLIN PARK, IL 60131**

**Sold
To**

**VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802**

Material conforms to listed specifications and is DFARS compliant.

Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

DAS
14
9-99 11/11/03

Castle Metals

HEAT NUMBER 264647
MECHANICAL ID _____
ITEM CODE 15003
LOT NUMBER _____
PO NUMBER 322637
RECEIPT DATE 2-20-15
SUPPLIER Valbruna
SPECIFICATION _____
LCS _____
COMMENT _____
APPROVED [Signature]

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email: DHackett@valbruna.us

Dennis Hackett

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6104-011
 DATE: 10/11/03

PO / BATCH NO.: 34012/151924

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 10
 QUANTITY INSPECTED: 10
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 6.50
 THICKNESS RECEIVED: 6.50
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒ N ☐	
CORRECT FINISH	☒ Y ☐ N	
CORROSION	Y ☐ N ☒	
CORRECT GRAIN DIRECTION	☒ Y ☐ N	
CORRECT MATERIAL	☒ Y ☐ N	17-4 PH
CORRECT THICKNESS	☒ Y ☐ N	6.50
PHOTO REQUIRED	Y ☐ N ☒	
CORRECT MATERIAL	☒ Y ☐ N	AUSSE 43
CORRECT REF # TO LINK CERT	☒ Y ☐ N	HEAT # 264647 / 426522
CORRECT MATERIAL IDENTIFICATION	☒ Y ☐ N	D6104-011
CORRECT M# ON THE MATERIAL	☒ Y ☐ N	3151924
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☐ N ☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☐ N ☒	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 13 [Signature]</u> DATE: <u>10/11/03</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING

AFTER MATERIAL PASSES INSPECTION

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN **20pcs** FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER